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CHICATRUG News

Chicago TRS-80* Users Group

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VOLUME IV, NO. 6 | All the TRS-80 News You Need When You Need It | JUNE 1981

TIDBYTES

by EBEN KENT

This month's column will be short. We have all sorts of reports from NCC and plenty of good articles. This month there seems to be a lot of new software around.

First we received a copy of Software Innovations' (320 Melbourne Road, Great Neck, NY 11021) Name That Song. This program is based on the TV show of the same title. I've played it once and it looks good. More on it in an upcoming issue.

Rumors have it that Star Fighter, the TRS-80 equivalent of Star Raiders, is every bit as good and interesting. The game has good graphics, excellent sound, and many modes of play. I understand it's even half the price of Star Raiders. Now you know the advantage of the TRS-80 over the Atari. By the way, Star Fighters is another Adventure International product.

For you Model II'ers, Bob Snapp (SNAPP, Inc., 8160 Corporate Park Drive, Cincinnati, OH 45242) has announced L25. This progam adds a 25th line to the display screen and uses it to show you the contents of the type ahead buffer. Sorry no cost information at present.

Software Affair (858 Rubis Dr., Sunnyvale, CA 94087) has announced Orchestra 85. Now you can enjoy your pieces in STEREO. Also there is improved signal-to-noise ratio (i.e.! fewer overtones). You also get a new sound, a violin. You also can create added percussion sounds. The documentation has been expanded too! If you don't have Orchestra 80, expect to pay $129.95. However, if you're willing to trade in, be prepared to pay $69.95.

NEWDOS/80 Version 2.0 (Apparat Inc., 4401 S. Tamarac Pkwy., Denver, CO 80237) should appear sometime next month. Our own Larry Rosen has prepared some comments for next month's newsletter, so I won't spend much time on V2's features. I should comment that the Model III version will be capable of reading disks (single or double density) written on the Model I and writing disks the Model I can read. Registered NEWDOS/80 owners should have received a package describing the upgrade charges (write them if you haven't) which are $60 for the new Model I version, but $125 for the Model III version. List price is still $149.95 for either version. There is some concern in the user community about the fairness of that policy.

Early reports on the PERCOM (211 N. Kirby, Garland, TX 75042) Doubler-II are quite positive. Most reports I've seen show that it has solved many of the problems users have experienced, especially locking out of tracks. Once again, if you already have a Doubler, check out the upgrade policy. By the way, all you LDOS fans won't have to wait too much longer for double density. Apparently the LDOS folks were waiting for the new Doubler-II to be released.

Radio Shack has announced two software packages which will allow the Model II to operate with two types of IBM terminal equipment. The first, the on-line standard Binary Synchronous Communications 3270 program, lets the TRS-80 communicate with IBM Systems 360/370 and 3000-series central processing units or any non-IBM device equipped with remote BSC-3270 communciations capability. It gives the Model II all the functions of a 3270 display station including screen formatting, poll responses, data link control, and time-out control. The other, the batch standard Binary Synchronous Communications 3780, permits the Model II to function as an IBM-compatible Remote Job Entry (RJE) terminal. This program includes commands and options which permit sending or receiving data from remote devices, automatic ASCII / EBCDIC conversion and automatic padding and truncation of records to match the transmitted data to the required protocol. Both packages will be available the third quarter of 1981 and each costs $995.

Many newsletters are talking about David Lien's latest effort, an MX-80 service manual. David, you remember, is the author of our first TRS-80 user's manual. This attempt is 107 pages long and presents all the printer's capabilities in the usual clear, concise manner. Some of you may have received the manual along with your printer. Others, be prepared to shell out $25.00. Looks like a good deal.

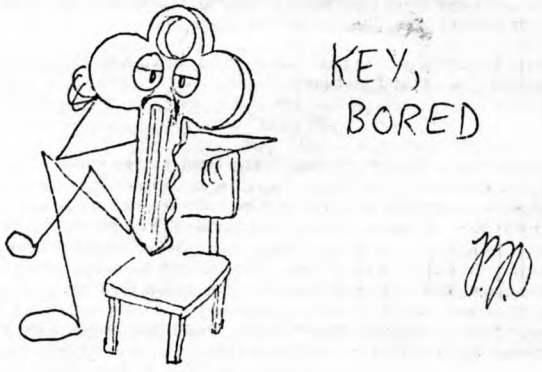
VOTRAX (500 Stephenson Highway, Troy, MI 48084) is offering an interesting text-to-speech synthesizer, Type-'N-Talk. Because of its nature, you type in the words themselves, not phonemes, and it translates them. You can hook it to your RS-232 and "hear" what the other computer is responding. I haven't heard one of them yet, but it looks good. The price $345.

Radio Shack apparently has altered their customer service numbers. Now they have separate numbers for Business Software Packages. Therefore, the list of numbers you should know is listed below.

M I/III Business Software 800-433-5641 (in Texas 800-772-5973)
M II Business Software 800-433-5640 (in Texas 800-772-5972)
All Other Software 800-433-1679 (in Texas 800-772-5914)

Apparently the Texas lines for business software won't be ready until around May 20. When you call, Radio Shack suggests you leave your name, phone number, which TRS-80 and number of drives, name and stock number of the software package you're using, error codes you may have received, how the error occurred, and information about any patches or program corrections you may have made.

On MicroNET, Radio Shack listed 17 identified bugs in Model III TRSDOS 1.2. The listing of the bugs is detailed, so I can't described them here to you (moreover, I don't have Radio Shack's permission to print them). Suffice it to say that Radio Shack plans to have the majority of them ironed out before they release 1.3. I'll try to have the list available at the next meeting. If you want the listing for your own, I would bug my local store (or the store where I bought my machine) or contact customer service.



IN THIS ISSUE:

NATIONAL COMPUTER CONFERENCE AND EXHIBIT
CHICAGO, ILL -- MAY, 1981

a report by: Tim Allman

This report is my own personal opinion of what I saw from my viewpoint as a user of a small computer interested in the displays at the NCC show. This show is the daddy of them all for the computer community. Needless to say, there were computers around before TRS-80 came along and these folks have been having shows for quite a while. This is the first year that the micros and "personal" computers were given display space along with the big guys (IBM, NCR, etc.).

The distinction among the various sizes of machines has blurred -- the large ones getting smaller and the small ones getting larger. The show is evolving in the same direction and, for someone used to shows for "personal computers", this show was not that kind of thing. There were no T-shirts, balloons, biorythms, junk box parts, memory chips for 79c and only one music synthesizer. There was much to see but you had to sift a little. The show was so large that it was impossible to see it all in a day but I would like to talk about what I did see and the things that impressed me.

To be truthful, I was expecting some kind of splash by the Japanese with a new machine or two but they seem to be concentrating their efforts in peripherals rather than micros. Sony displayed a 3.5 inch disk drive that you can hold in the palm of your hand. The most impressive efforts by the Japanese seems to be in CRT displays. Panasonic, Sony, Hitachi and others had color displays that were so good that you had to look close to be sure they weren't fake. Printers were not forgotten especially by Epson and Hitachi with Epson showing a new wide-carriage model 100 and the MX80FT. Epson also announced a user installable upgrade ROM for the MX80 that will allow 24 print fonts, italics, backspacing, and dot graphics. Price? $95. For the rich guys, Hitachi had a couple of ink jet printers that print at 100 and 200 cps and sell for above $5K. Both were about as noisy as a CRT.

Another booth that I was eager to get to was the Osborne Co. Adam Osborne, as you probably have heard, knows all there is to know about small computers for business. If you don't think so, ask him. The OSBORNE 1 is his entry into the small computer demolition derby. It is touted as the ultimate personal computer; you throw away your briefcase and carry the OS1 instead. The unit features a Z80A cpu, 64K bytes, two 40 track drives, RS232 and a 5" monitor with a 52 x 24 line display that scrolls ala SCRIPSIT (tm). The operating system is CPM which is probably the best feature of the whole machine. There is an optional battery pack for those trips to the mountains and the seashore and an external 12" monitor if you want to see what you are typing. At $1795, the price is attractive but there is one catch: you can't get one yet. They will take a deposit of $180 to hold your place in line for later delivery. (Where have I heard that before?) Save your cash until you see it in the "many computer stores across the country" that will be selling it.

Let me go through my notes and try to comment on the various equipment displays that I managed to see.

PRINTERS:

Lots of very nice printers. Probably the most to see for a micro owner. Okidata had 5 printers at their booth and I think they were all new. The 2350 prints at 350 cps and in two colors -- price below $1500 in OEM quantities. To be shipped in October is the Microline 84 -- 200 cps, 9 pin head and a 15" platen. List price under $1000 in 200 quantities. Okidata has replaced the 82 and 83 with 82A and 83A. Main differences are the 9 pin head and the speed (120 cps).

IDS (Paper Tiger) showed their newest model 560 with a wide carriage and all the other features of the Tiger line.

Epson of course was not to be outdone. They have gotten into the display business in a big way. But first the printers. The good old MX80 is now the MX80FT with a friction and tractor feed. There are also new features and these can be installed in an older MX80 by changing the ROM. The friction feed, however, cannot be installed on an older machine. New models were the MX100, a wide carriage model with MX80 specs, and the MX70, a cheap MX80.

The Epson company has also gotten into the display business with LCD displays for text and graphics. By far the most interesting item was a 2" x 2" x 1/8" black and white video display with gray scale. Two of these things were running in a lighted case showing a movie and a third was in a mock-up plastic case about the size of a small transistor radio. The third one had the baseball game on and you could read the name and number of the player printed on the bottom of the screen! The small TV was made by SEIKO and EPSON.

If you are interested in plotters, then you should see the Houston Instrument DMP series. Six plotters with various features were running including one with a TRS-80 model I. The plotter will accept commands from LPRINT statements and can be easily controlled to plot graphs, figures and also to print letters in various sizes.

DISK DRIVES:

Things are really getting confusing in the disk drive market. Hard, soft, 5", 8", 14" -- it sounds like the menu at a hot dog stand.

Probably the most interesting entry was the Sony 3.5 inch Micro Floppy disk Drive. This thing really looks neat. It is about 5" deep, 4" wide and 2" thick. The disk are floppy but not the case. Each disk is in a hard plasic holder that completely protects it. A sliding metal shutter moves over when you slide the disk into the drive. How much does it hold? Would you believe 437.5K? Well not quite. After all, it must be formatted. The disk is single sided, double density with 9 sectors per track and 512 bytes/sector. Still, 322.5K is not bad for a 3.5" disk. The drives run at 600 rpm. Sony is cagey about who is buying them but they are aiming at small computer manufacturers. Just think how many you could get into an OSBORNE 1.

For those of you that have to store a lot of phone numbers, Hitachi introduced a 14" Winchester model DKU 97 which has a total storage capacity of 1.2 GIGABYTES on two 600 meg spindles. Pricing has not been fixed. (Probably only a couple of gigabucks.)

It seems like a lot of companies are getting into the hard drive business, which is great because it's just a matter of time until the price gets into my range (2 figures).

Shugart had 3 new Winchester drives in addition to their single and double sided 96 tpi (80 track) drives. MPI also has a new 10 meg hard drive called the model 10 and in the future will have two more drives (20 meg and 40 meg) that will fit into the same case as a 5" floppy.

Of course BASF had their 5" fixed disk but they also demonstrated a new type of alignment disk and the BASF Headcleaning FlexyDisk which cleans heads on floppy drives in 60 seconds without using chemicals or liquids.

OTHER STUFF:

D.C. HAYES, a company familiar to APPLE users, has taken their modem card and packaged it into a gizmo called a SMARTMODEM. This is part of a micro component system that includes timers and other equipment that are designed to stack on top of each other. The smart modem is a 300 baud, autodial, autoanswer device with 30 different commands available via program or keyboard control. It even has a built in speaker. Price should be very competitive.

VOTRAX -- a division of Federal Screw Works (no comment on their business practices) is getting into the voice synthesis business pretty big. They offered chips, boards, modules and whole systems for voice generation. Several other manufacturers were also showing voice systems and I think I see why Radio Shack has their voice synthesizer on sale.

For those interested in remote data entry, you were not forgotten. The Motorola RDX1000 provides remote, two-way alphanumeric data entry when attached to a standard Motorola walkie-talkie. The thing will even interface a light pen and transmit the data to the host.

TELEXON Corp has a more sophisticated hand held system that is actually a hand held computer with 16 dedicated and 16 programmable keys with a single line scrolling display. The application program is burned into a ROM and is plugged into the case along with the custom key set. This arrangement allows the same machine to be used by many different operators for any type of job. The data can be dumped in almost any format. Memory size is up to 128K.

Another gimmick you may be seeing soon is an automatic signature verifier. You sign your checks on top of a sensitized pad and the computer figures out if it's really you. I doubt if it will slow my wife down.

COMPUTERS:

As far as small systems are concerned, there wasn't too much to see. This show is really for manufacturers of large and medium size business computer systems and is hardware oriented. Not too much for the TRS-80 user but there were a few interesting displays.

(continued on page 6)

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LAST MEETING

The last CHICATRUG meeting was jammed packed with people and presentations. To lead things off, Eben Kent held a discussion on the recently held National Computer Conference. General concensus was that the conference was big, but not representative of the microcomputer field. One member responded that this conference is primarily a trade show for the mainframe and mincomputer market and that microcomputers were only a recent addition. More about the conference can be found in other article in this issue.

Bob Gallie introduced the topic of data communications in cable network. Apparently, there is very little consumer knowledge in this field and the cable companies, for the most part, aren't even aware of it. However, the potential implications for the home computer market are staggering. A number of members liked the introduction so much that Bob agreed to return for a more detailed presentation of the subject.

Many of the attending members believed the new print format for the newsletter was improved. Most thought the type was cleaner and relatively easy to read. There was a criticism that the type size was too small. We welcome any further comments any members and readers may have.

Our formal presentations occurred next. Carey Schug presented an interesting routine to improve and replace the INKEY$ function. Carey cited the fact that INKEY$ is generally slow and causes able typists to slow down their input. Additionally, INKEY$ requires all the information to be typed in before it can be processed. Since Carey's routine is so fast, the data can be partially processed so that, for instance, if you are typing in a command, the computer can finish that command once it recognizes what that command is. His routine also allows for multiple word input -- a must for adventure-type games. Carey has promised to write up the routine for a future newsletter, so keep your keypecking fingers out the touch out.

George Matasyek presented a good example of the CHAIN command in NEWDOS/80. The example showed how he could boot up and initialize his bulletin board simply by hitting the reset button. George pointed out the obvious advantage of this -- namely that someone who has little or no knowledge of microcomputers can do it! George couldn't take full credit for the input. He relied on an excellent routine which appeared in the October, 1980 issue of SOFTSIDE magazine. This program will transform a number of commands into an acceptable CHAIN file.

Dick Stone anchored our presentations with a discussion of the FORTH language. Dick introduced the topic by saying he had been spending a lot of time mastering PASCAL before he "discovered" FORTH. However, he threw out all that knowledge once he saw FORTH's capabilties. Dick is using MMSFORTH (tm), a variation from the standard fig-FORTH (tm). Dick was most impressed by the structure of FORTH. Like a dictionary, one defines one's necessary commands. Once defined, one can use them over and over again. Therefore programs in FORTH become easier and shorter to write the more you use it.

Dick also pointed out various other advantages of FORTH. Programs in FORTH are generally quite short and easy to read once one has mastered the FORTH's syntax. Dick presented a listing of the game NIM which turned out to be four FORTH screens or 60 lines of commands. Try duplicating that task in BASIC or even FORTRAN! Additionally, FORTH is compiled and therefore quite fast. MMSFORTH comes with an impressively quick sort routine, which sorted over 1000 items in less than four seconds! Not only that, but it displayed the process on the CRT.

Dick did warn that mastering FORTH takes some work. Its syntax is very different than any of the convential languages. However, he recommends it for anyone who is tired of BASIC and wishes to experiment. Dick also mentioned that a new version of MMSFORTH (version 2.0) should soon be available. This version, he said, will be more powerful than earlier version of MMSFORTH and compatible with fig-FORTH.

CALL THE FORUM 80

782-8180

NEXT MEETING

Mark down Wednesday, June 17, on your calendar. That's CHICATRUG's next meeting. At that time Manny will give a detailed report on the New York TRS-80 show. He will also present some interesting business applications with VISICALC (tm). It will be our first real presentation of this exceptional program, so we wish to invite you to bring you favorite routines to present. We also hope to discuss VISICALC's capabilties in general.

Larry Rosen, our resident machine guru, will present another in his machine language tutorials. This session Larry will present a routine to check disk drive speed. It will calculate the RPM and display the variance (up to 9%). Remember it all begins at 6:00 p.m. at 203 N. Wabash.

PROJECT OMEGA

reviewed by Jim Brigham

By Bob Nicholas
Distributed by Aventure International

16K Level II
Model I/III tape ($14.95) or Model I disk ($24.95)

Project Omega is a computer simulation strategy game in the vein of SANTA PARAVIA AND FIUMACCIO and GALACTIC TRADER. You make decisions concerning interrelated variables. With this game you become governor of one of Earth's first orbiting space colonies. Your objectives are threefold:

1) to pay off your amortization costs (which start at 100 billion.

2) to convince a sufficient number of earth men to migrate to your colony (without overpopulation.

3) to finish the planned construction of the colony and demonstrate the economic feasibility of space industrialization by amassing at least 250 billion dollars in cash reserves.

In playing the game you have the choice of playing a regular game, the tournament version, or loading in a game already in progress. In the regular version the game is more random than the tournament version. All versions allow up to six players to compete at any given time. Frankly, I can't imagine more than two or three people playing.

You receive status reports early. They present the percentage of your goal you have achieved. At this point you also have the option of saving a game. You receive regular reports from your maintenance crew concerning the structural condition of your colony. These conditions are green, yellow, orange and red, each representing an appropriate condition from normal to critical. You are given time to adjust any excessive internal pressures caused by such factors as improper atmosphere, overpopulation, etc. You are also notified about the cost of meteor damage the previous year.

You can call up graphic representations of your colony and review any or all of eight reports based on last year's figures and next year's projections. The reports are: 1) finances, 2) popuation, 3) habitat, 4) work force, 5) lunar base, 6) construction, 7) agriculture, and 8) industry. In this manner you can make "educated" decisions.

For instance, if you ask for the FINANCE REPORT, the computer will provide data in the following categories: 1) previous balance of funds, 2) expenses incurred, 3) income, 4) paid on debt, 5) current balance, 6) current debt, and salaries paid to workers.

Naturally alterations to certain parts of the annual plan will affect other areas. For instance if you change calorie and protein allotments, you will change population growth and worker production. The game, however, lets you simulate any changes you wish to make and will show you the effect. You may change your annual plan as much as you wish. There are approximately 180 pieces of information you must deal with for each year. Only when you are satisfied with you plan will it go into effect.

This game is highly complex and provides for excellent simulation. Yet it isn't a difficult game to master. I averaged one to three hour sessions almost immediately. The game contains almost no graphics; there's only the portrayal of the space colony. Yet I believe that graphics have little value in a game such as this one.

Two minor criticisms. Unless you are quite careless (or a ruthless ruler), it's quite difficult to lose the game. You are given ample time to complete your task and you are also given ample warning when things are going poorly. Also the game offers few unique solutions.

⇦ *(continued on preceding column)*

Therefore, once you have won the game, there is little reason to play it again. However, I must warn you that there are some factors totally out of your control. Despite these criticisms, I find OMEGA to be the best game of its kind. I recommend it for anyone who wishes to explore intricate relationships of seemingly unrelated items.

kiddie korner

By Mark C. Wehmhoefer (Micronet - 70545,346)

All programs from:
Instant Software
Peterborough, NH 03458
(Also sold by EBG & Associates)

GRADE BOOK

Model I: 4K Level I -or- 16K Level II
Model III: 16K level II
(cassette - $7.95) runs as is

This program automates an educator's grade calculation procedure. GRADE BOOK assumes standard grade periods (i.e.: quarterly, semester, yearly) are used while other grade periods (e.g., monthly, trimester, etc.) can be handled through manipulation of the grade categories.

First, the number of grades in each of the five predefined categories are entered. For example, 2 tests, 4 quizes, 1 homework, 5 classroom and 0 projects. Then the number of grades per standard grade period (i.e.: semester exams, previous quarters, first semester, yearly exams, current quarter and current semester) are entered. To perform other grade period averaging (e.g., monthly, trimester, etc.), zeroes must be entered in all the standard grade periods.

Next, grade weight (i.e.: all equal or unequal) and grade conversion (i.e.: all grades are on a 100 point scale or different scales) are selected. If different grade scales are used, the maximum grade per category must be entered. Finally, the percentage of each grade category for the current grading period is selected.

The entire procedure just described is performed once and it is used to calculate each student's grade average.

The last step is the entry of each student's grades in the previously chosen categories. If necessary, you may drop a grade without penalizing the student or reentering all the grades. Individual grades cannot be verified or corrected after the initial input.

The student's calculated grade is displayed after a short delay. Individual grades and calculated grade averages cannot be saved via cassette nor printer.

It took me several test runs of GRADE BOOK to understand the effects of different options on the final calculated grade. The biggest plus for this program is that it will run on different TRS models and memory size machines.

TEACHER

Model I or Model III: 16k Level II (cassette - $9.95)
runs as is

Teacher is a program that allows an educator / parent to design lessons where subject material is limited only by the user's imagination.

When entering questions and answers (Q&A), the educator / parent can precede each question with a common phrase (e.g., add one to this number). A special phrase for true and false questions is predefined and must be entered exactly as shown in the documentation booklet. A maximum of twenty Q&A's per lesson are allowed, questions cannot exceed 110 characters and answers cannot exceed 62 characters

After each Q&A is entered, you are given only five to seven seconds to correct the phrase. Later editing or viewing of Q&A's is not allowed since the information is immediately written to cassette tape.

After a lesson is entered, either manually or via cassette, the educator / parent must decide the method of presentation for the lesson material.

1) Graphic rewards can be displayed after each correct response (i.e.: cannon, star, hook, none or review graphics). In addition to a graphics reward, a congratuatory message is always displayed after a correct response and cleverly incorporated with the graphics display. These rewards will delight the youngsters, but should be omitted for older children.

2) The number of hints (i.e.: zero to five) given to the student after incorrect responses must be picked. The program does not continue until the correct response is entered, so at least one hint should be chosen.

3) Allow the student to review the entire lesson prior to starting the test. Questions and answers are randomly selected during an actual session.

When the student completes a lesson, he/she is automatically given a review of the missed questions. If the student gets a perfect score, a special graphic reward is given.

After the student is done, several options are available: rerun the same lesson, repeat the lesson but change the presentation method, run a new lesson, or exit the program.

A lesson transfer program is included with TEACHER. It allows the user to combine multiple lessons onto one cassette tape, but lesson data cannot be merged or altered.

TEACHER'S AIDE

Model I or Model III: 32k one disk (Diskette - $39.95)
Not tested

This program contains all the features of TEACHER except it uses disk input / output and includes other enhancements.

An excellent input analysis routine allows the student to enter two wrong letters per answer (e.g., transposition). He/she receives credit for a correct response, but the optional graphics reward is not received. In order to trigger this feature, the answer must contain five or more letters.

Each student's score can be routed to a printer. Grades can be saved on disk for later analysis and comparision.

TEACHER'S AIDE has two major ommisions, the lack of cassette tape input / output and compatibility with TEACHER. All lesson data used with TEACHER will have to be manually reentered.

SUMMARY

All three programs contain minor annoying errors. Specfic answers are required during the lesson creation and presentation phases (e.g., NO instead of N). REDO error messages occur when alphabetic responses are entered mistakenly. The enter key is accepted as a response and continues program execution. And INKEY$ and INPUT statements are not consistent throughout each program.

Overall, these programs will provide additional educational tools for the educator/parent, but their most efficient and effective use will require several test runs.

EDU - SOURCES

Minnesota Educational Computing Consotium (MECC), 2520 Broadway Drive, St Paul, MN 55113 is an organization that coordinates and provides services to students, teachers and educational administrators throughout the state of Minnesota.
Many publications, booklets and manuals are availiable for various fees. Write MECC for more details.

THE MAGIC MACHINE by Theodore J. Cohen & Jacqueline H. Bray is a delightful coloring book and a box of crayons is included. It is published by Byte Publications, Inc., 70 Main Street, Peterborough, NH 03458 and it is priced at $2.00.

KATIE AND THE COMPUTER by Fred D' Ignazio is an excellent book on computers for children of all ages. It is priced at $6.95 and is published by Creative Computing Press, P.O. Box 789-M, Morristown, NJ 07960.

MORE SOFTSWAP NEWS

Ann Lathrop, the coordinator of the CUE SOFTSWAP mentioned last month, has provided me with additional information. Any interested persons, educators or parents, can purchase the SOFTSWAP disks from CUE. Membership in CUE is not required, but it is recommended to keep abreast of current information. These programs can be placed on public bulletin boards (e.g., Manny's FORUM-80 (tm)) as long as credit is given to CUE. Finally, the disks may be distributed locally to any interested person.

I will place a couple of the SOFTSWAP programs on the bulletin board for downloading and will copy the disks for anyone interested. Note: I will not mail diskettes, so contact me on the FORUM-80 (tm) (312) 782-8180 or leave a message at Manny's office.

Next Month: Alpha and Sigma Ex from Mercer Systems, 87 Scooter Lane, Hicksville, NY 11801.

MODEL I - MICROSOFT BASIC COMPILER

by: Lynd T. Blatchford

When Microsoft Consumer Products first introduced the Basic Compiler it showed a lot of promise but suffered from a number of frustrating flaws. I was reminded of this in late January when I attended a meeting for Enrolled Actuaries in Washington. I had been asked several times whether or not I found the Model I to be too slow for any serious calculation work. I had responded that any doubts that I had were eliminated by the speed of processing attainable with the Basic Compiler (this is not to say that I advocate abandoning mainframe computers, they have a very appropriate place as do micros). In each case, the questioners responded that they had heard that the Basic Compiler was "no good". While the early versions of the compiler suffered from serious flaws, I feel I can recommend the current version without reservation. I am most happy with all aspects of its operation. If you need significantly increased computational speed, you should consider this software.

There is not 100% compatibility between the Interpreter Basic and the Basic Compiler in the sense that a running interpretive program may need a few minor revisions before it will compile without error. However, these revisions tend to be very minor and you may find, as I have, that the compiler will point out errors in your running interpretive programs of which you may have been unaware. In general, I have found that the very modest restrictions of the compiler in comparison to the interpreter lead to much better code organization, i.e.: they tend to enforce higher quality work on your part. You may find that many of your programs will not require any modification and those that do will be able to be run, once modified, either in the compiled or interpretive mode.

If the capability of running a compiler version in the interpretive mode is not a requirement, there are a number of features in the compiler version which you may wish to use, for example:

1. There is a CALL statement which permits you to call FORTRAN or Assembly Language subroutines with the arguments specified in the CALL statement.

2. WHILE/WEND loops are supported.

3. Double precision transcendental functions are supported.

4. Long variable names (up to 40 significant characters) are supported.

5. Logical record lengths of other than 256 bytes in direct access files are supported.

These features open a whole new vista in BASIC programming but are secondary to enhancement of processing speed. The degree of enhancement is substantially influenced by the amount of integer processing in your programs. Microsoft claims a 30 times speed improvement for integer processing. My programs predominantly involve single precision and integer arithmetic. Many of my applications which had been CPU bound in the interpretive mode are now I/O bound. In spite of this, the lowest speed enhancement I have achieved is 13 times.

Prior to the latest version of the compiler I had not been able to run many of the compiled programs under NEWDOS/80. I have yet to experience a problem with the current version of the compiler. I have not attempted to compile or load under NEWDOS/80.

Under the early versions of the compiler, the program size which could be compiled and loaded was somewhat restricted. The program size which can now be compiled and loaded is substantially increased. I have been able to compile and load all but one of my BASIC programs and that program strains the capacity of my Model I in the interpretive mode. This program would compile (and I found some previously undiscovered errors) but would not load because of the size of the code. Under normal circumstances, it is doubtful if you will run into size problems.

If you use the BASIC Compiler for programs you intend to sell, you must pay royalties to Microsoft Consumer Services. There are several alternative royalty arrangements.

In summary, the Microsoft Basic Compiler is easily a valuable adjunct to your operation if you need the significant speed advantages it offers. If you are willing to live with incompatibility with the interpretive version of BASIC, then the added features of the compiler version are worthy of your consideration.

*****

DOSPLUS

a review by: *EBEN KENT*

This review is based upon use of Dosplus 3.3D on a Model I. For those more discerning readers, the first question which might come to mind is: how can I run a Model III DOS on the Model I? Conversations with a company representative have revealed that the Micro Systems Software ads in all issues of 80 MICROCOMPUTING up through May of 1981 are erroneous. Micro Systems Software is now marketing only two DOS's: Dosplus 3.3S (single density) and Dosplus 3.3D (double & single density). The 3.3D version is able to read a Model III diskette and run at 4 mHz reliably. It is Model III compatible in this respect.

What is DOSPLUS really like? It is like running the better features of TRSDOS 2.3, ULTRADOS, NEWDOS80, and LDOS all at the same time. For example, in order to backup a disk one would type BACKUP a la TRSDOS 2.3. Then one would go through the identical prompts that are in TRSDOS. Finally, your diskette would be backed up with only the allocated tracks and sectors (also just like TRSDOS). A short trip to BASIC would reveal that one may delete and insert (DI) or duplicate a line (DU) just like NEWDOS80. Or let's say that you only have one drive and want to move a file from one diskette to another. Instead of typing XFER (LDOS) or Copy :0 $ (NEWDOS80), one would use DOSPLUS's COPY1 command. What else is in DOSPLUS? A NEWDOS80 style line renumberer, spooler, Superzap (DISKZAP), screenprint, and cross-reference table are included. An LDOS type BASIC single stepper, device router (FORCE), RS232 software select, and a printer filter (FORMS) are standard equipment. An ULTRADOS type BASIC program compression utility (CRUNCH), a global variable replacer (SR/CMD), automatic lower case recognition, and an alternative BASIC (TBASIC) are thrown in for good measure.

So what's different about DOSPLUS? Typing RESTORE will recover that file you accidentally killed. MAP will show you the track and sector locations of all your files. A real bonus lies in wait when the "V" command is used in BASIC. This command will allow the user to go between two BASIC programs with all variables intact. Another nice feature is the CMD"M" command which will instantly display all currently allocated variables and their values. By the way, all DOS commands are executable from BASIC. So if you wish to build a /JCL file, it may be done with a BASIC program of CMD commands or with DOSPLUS's BUILD and DO commands from DOS.

If all of these features weren't enough, one other priceless thing shines clearly throughout all of DOSPLUS: the methodical planning of a programmer who wanted to take care of the little details as well. We have all seen compression utilities come and go. DOSPLUS's CRUNCH has a small option which will remove all REM's but leave in the line number so that your "packed" program won't crash because of an unreferenced GOTO or GOSUB. Or the last time you formatted a diskette, did you notice that first it formatted from track 0 to track 40 and then it stepped the head all the way out to 0 again to begin verifying in ascending order? DOSPLUS is a little different. After it has formatted to track 40, it immediately begins verifying in descending order. Or how many users own SCRIPSIT's which had to be patched to work with this or that DOS? Sure they usually supply zaps. How many supply a program to patch a copy of SCRIPSIT or SuperScript (already patched by Acorn)? DOSPLUS did. What about all the users who complained about LPRINT TAB(X) where X>64? Tab to any position your printer can handle with DOSPLUS. Are you tired of loading your entire sequential file just to add one record? The CMD"E" command has been implemented to open a sequential file and place a pointer at the end of the file; add data at will without loading the file.

But before you discard your old DOS, let me warn you. The authors of the documentation have freely admitted that the DOSPLUS manual "is a User's Manual not a Technical Manual". Technical or otherwise, I like my manuals meaty and fat like the manuals supplied with NEWDOS80 or LDOS. The DOSPLUS manual weighs in at 27 double sided pages. Three paragraphs are devoted to variable length records under DOSPLUS. As well there was a utility on the master diskette called CONVERT/CMD. No mention of its purpose or command usage was made in the documentation. A call to the company revealed that this utility was for the express purpose of converting a Model III diskette for use with Dosplus and was a late addition. DOSPLUS is easy to use if you have had experience with other DOS's. In addition, a lot of "idiot proofing" has gone into it . (NOTE: Micro Systems Software IS looking for someone who is capable of writing the technical manual).

THE BOTTOM LINE: DOSPLUS 3.3D will read / write Model I single density diskettes. It will read / write double density on the Model I (hardware must be there first). It will not read / write a diskette created by NEWDOS80 DOUBLEZAP II. DOSPLUS 3.3D for the Model I and III sells for $49.95.

Active Input Routines in BASIC

By Carey Tyler Schug

As presented at the May, 1981 Chicatrug Meeting

As Al Baker has discussed at a previous Chicatrug meeting, a program can be made more user oriented by processing the user's input as it is keyed in rather than waiting until the enter key has been hit. In addition, if some processing can be done during the input of data, the delay before the response may be reduced. The thorn in the side of all this, is that the use of INKEY$ to achieve these goals will probably be slower than even a slightly experienced user can type, especially if the notorious "garbage collector" hits.

Even a carefully written input routine will be slow because of the "administrative" work that must be performed, specifically (1) checking to see if a key was pressed, (2) echoing the character to the screen, (3) checking to see if it is a key that requires special processing, (4) invoking the special processing, (5) saving the input data for later processing, and (6) checking for special conditions (like too many characters input). If all the above could be done in one BASIC statement, then the computer could do some additional processing after each keystroke without causing delays. Well, obviously this article is provides a way to do this.

This program will generate a short machine language program and the necessary BASIC statements to embed the routine into a string literal in a BASIC program. This embedded routine can be made a part of another program to instantly set itself up as a USR function (the machine language routine is self relocating). The routine will perform the following functions:

1. Blink a block cursor,
2. Return a value of '1' if no key was pressed,
3. Save the character in a string for later processing,
4. Check for a user-defined list of special characters, and return a unique value for each,
5. Return a value of '1' for any other control characters (to cause them to be ignored),
6. Return another value for any other character and display the character on the screen.

The values returned are integers starting with 1, so that they can be used directly in an ON...GOTO to select the appropriate processing routine. The BASIC routine assumes that there have been "DEFSTR A" and "DEFINT I-O" statements have been executed, and that the variables A, I, J, and K are available for temporary values. If these do not match, you may have to translate to different symbols or add a "$" after the use the references to the variable A, and "%" after the references to the integer variables.

Setup Instructions

First you will have to decide which characters will require special processing. This will probably include such control characters as carraige return, backspace, and perhaps control-X (shift backspace). In my example I am parsing the input into words, as might be required for an adventure program, so my example considers the spacebar to be a special character. Run the INPTUSR5/BAS program (listing 1). It will prompt you to enter your special characters. When you have entered them all, enter the last one a second time to tell the generator program that you are done. You will then be asked which USR function (zero through nine) to be generated -- a C/R here will generate a routine for non-disk BASIC. You will also have to indicate the line number for your imbedded string, which can be near the end of your program since you only need call it once during initialization. The generated routine will be five lines of BASIC code, but the last four lines will delete themselves after the routine has been POKE'd into the string. For disk BASIC you will then enter a filespec, otherwise the routine will just display on the screen and you will have to type it in (if you have a printer you might modify the program to LPRINT the routine).

Using the Routine

The routine generated above should be called in the initialization of your program. When the first time you RUN your program, the machine language routine will be POKE'd into the string, the extra colon on the end of the first line will be made into a RETURN, and the remaining lines will be deleted. Subsequently when you run your program it will set up an instantaneous linkage into the desired USR function.

You will have to write your own subroutine to utilize the USR function. For maximum processing speed, this routine should be near the beginning of your program, and use short variable names and line numbers with as few digits as possible. Probably the best way to see what is requred is to look at the example routine, INPTUSR5/EXA (listing 2), shown. In order to save the characters input, you will need to define a string area to hold them and get the memory address where it is stored (done with VARPTR, PEEK and POKE). By using a FOR...NEXT loop on the first and last positions of this string, the NEXT will serve to increment the address pointer of where the next character is to be stored and at the same time check for the end of the input area at the same time the ON...GOTO has invoked whatever special routines may be needed. If you wish to put a time limit on the input, you could increment an integer by one (e.g. O=O+1) just before the ON...GOTO and letting an ON ERROR GOTO xx routine catch the overflow when the variable exceeds 32767. By choosing an appropriate starting value for the variable, any reasonable time-out period can be chosen. WARNING You should not do any string processing in your input routine (e.g. A$=B$) unless you know what all the repercussions may be, because you might invoke the "garbage collector" which could (1) cause a delay or (2) cause your input area to be moved, so that you will be saving the input in the middle of some OTHER string.

(See following page for Program Listings.)

N C C: *review by T. Allman (cont'd from p. 2)*

One of the first models from Japan is the NEC PC8000 Series Microcomputer System. The PC runs with Microsoft BASIC in ROM and a 4 mHz Z80A CPU. It has 24K of ROM and 32K of RAM expandable to 160K with an external unit. The display is impressive with a 248 symbol character set and 8 different formats from 80 x 25 to 36 x 20. Graphics are 160 x 100 and 8 colors are available. Keyboard layout is similar to the TRS-80 with a numeric pad and added function and control keys. Monitor, terminal emulator, serial and parallel interface are included. The disk version runs CPM and there is provision for alternate ROM sets. BYTE magazine recently had an article about the PC8000 system if you are interested.

One of the hottest topics of the show for the big guys was networking. The micros were not left out, however. Personal Micro Computers (PMC) had the newest PMC-80 (TRS-80 workalike) running their new low cost system for local network distribution. The master system was a 48K PMC-80 with two drives. The slaves were PMC-80's with the new Fastload mod which allows downloading at the amazing speed of "10,000 bits a second". The downloader interface is an S-100 card that plugs into the expansion box. Price of the master is under $3000 and each slave comes in under $1000.

All in all, it was a very interesting show and it gave me an idea of where our hardware is heading in the future.

The proliferation of small Winchester systems seems to indicate that a future small system will probably use floppies only for software and data transfer with most storage being online.

Printers can't get much cheaper because they are essentially mechanical devices and still require machinery and labor to be manufactured. They will, however, have many more features and will be easier to use. The controls are microprocessor controlled and are only limited by the software.

The days of the black and white CRT display are definitely coming to an end. Future displays will be flat, solid state or super hi-res color CRTs. I am dreaming about a 64 x 16 flat screen display that plugs into the expansion port on a TRS-80 and eliminates the monitor altogether.

One more item worth mentioning. XEROX had a very popular section demonstrating the STAR SYSTEM. The STAR is essentially an office information, storage, mail, printing and document preperation system that will make an office a very different place. The thing that struck me was that XEROX did not attempt to convert office workers to computer operators. Although the terminals are traditional style, the displays are not. The CRT is black and white with gray scale and consists of a representation of what would be your desk top if you had the work laid in front of you. Using what they call "icons" the system displays small symbols for old-fashioned office tools such as folders, file drawers, files, in-basket, printers, calculators, etc. To use a particular device, you move a cursor to the icon, select the device and the display on the rest of the screen is used to work with that device. It looks strange but XEROX has more money than I do so I guess they know what they are doing.

The following listings are part of Carey Schug's "Active Input Routines in BASIC."
See page 6 for beginning of text.

```
2 CLS:CLEAR500:DEFSTRA:DEFINTB-W:DIMS(99),L(99),T(102):N=1:T=256:U=255:V=16:W=15
:GOTO4
3 M=M+N:L=L+1
4 READA:B=ASC(A):IFB)47THEN3ELSEIFB=43THEN3ELSEIFB=37THEN3
5 IFB)36THEN6ELSEL=L+1:M=M+N:IFB=35THEN3ELSEK=LEN(A)-2:M=M+K*N:L=L+K:GOTO4
6 K=VAL(MID$(A,2)):IFB=38THENIFL(K)THENPRINT"DD";K:GOTO4ELSEL(K)=M:GOTO4
7 IFB=42THENL=K:N=0:GOTO4ELSEIFB=45THENS(K)=PEEK(L):GOTO3
9 IFB()47THENPRINT"BAD VAL":ENDELSEIFM()KTHENPRINT"BAD LEN";M:ENDELSEM1=M-1:PRIN
T"PASS 1
10 IFM1)128THENA=STRING$(128,0):M1=M1-128:GOTO10ELSEA=STRING$(M1,0):D=16598:LN=M
-3
11 B=VARPTR(L):L1=PEEK(D):L2=PEEK(D+1):POKEB,L1:POKEB+1,L2:LS=L
12 A=CHR$(1):POKE16561,PEEK(D):POKE16562,PEEK(D+1):RESTORE
19 FORM=1TO9:T(M+48)=M:NEXT:FORM=10TO15:T(M+55)=M:T(M+87)=M:NEXT:M=0:N=1:GOTO21
20 M=M+N:L=L+1
21 READA:B=ASC(A):IFB=36THEN23ELSEIFB(48THEN25
22 C=ASC(RIGHT$(A,1)):D=T(B)*16+T(C):Z=Z+D:POKEL,D:GOTO20
23 FORD=1TOLEN(A)-1:E=ASC(MID$(A,D)):Z=Z+E:POKEL,E:L=L+1:NEXT:GOTO21
25 D=VAL(MID$(A,2)):Z=D+B*8+Z:IFB=38THEN21ELSEIFB=45THEN20
26 IFB=42THENN=0:M=0:L=D:GOTO21
27 IFB=43THENPOKEL,S(D):GOTO20
28 IFB=37THENPOKEL,L(D)-M-1ANDU:GOTO20
29 IFB=35THENC=L1+L(D):POKEL,UANDC:POKEL+1,C/T+L2:L=L+2:M=M+N+N:GOTO21
30 I=2:READY:IFY()ZTHENPRINT"BAD SUM",Z:END
35 DATA F3,CD,7F,0A,0E,%3,3A,99,40, FE,60,38,%0,FE,80,30,%0,D8,20
40 DATA &0,77, 57,AF,47,32,99,40,3B,3B,E1,09,FB,4A
45 DATA 11,21,40,13,1A,34,CB,66,20,02,3E,B0,ED,5B,20,40,12
50 DATA 23,79,04,B7,28,%2,04, &1,BE,28,%2,04,23,CB,7E,28,%1
55 DATA FE,20,30,04,06,01,38,%2,21,20,40,5E,23,56,12,13
57 DATA 7A,FE,40,38,01,1B, 2B,73,23,72,23,1A,77
60 DATA &2,68,AF,67,C3,9A,0A,03, 0,&3,0
65 DATA /103,11927
70 PRINT"ENTER CHARACTER TO BE CAUSE THE VALUE OF USR TO BE";I;
75 A$=INKEY$:IFA$=""THEN75ELSEIFA$()B$THENB$=A$:PRINT"--";ASC(A$):S(I)=ASC(A$):I
=I+1:GOTO70ELSEPRINT
80 S(I)=128:B$="":INPUT"USR FUNCTION NUMBER (C/R FOR LEVEL2)";B$:IFB$=""THENC$="
 "ELSEIFLEN(B$))1ORB$("0"ORB$)"9"THEN80
100 INPUT"LINE #";N
105 IFB$)""THENLINEINPUT"FILESPEC? ";A$:OPEN"O",1,A$
110 A$=MID$(STR$(N),2)+C$+"A="+CHR$(34)+STRING$(LN+I,95)+CHR$(34)
115 GOSUB400:IFB$)""THENA$=":I=1:K=VARPTR(I):J=VARPTR(A):POKEK,PEEK(J+1):POKEK+1
,PEEK(J+2):DEFUSR"+B$+"=I::"+CHR$(13)ELSEA$=":I=VARPTR(A):POKE16526,PEEK(I+1):PO
KE16527,PEEK(I+2)::"+CHR$(13)
120 GOSUB400:A$=MID$(STR$(N+1),2)+C$+"DEFINTI-N:I=VARPTR(A$):J=VARPTR(K):POKEJ,P
EEK(I+1):POKEJ+1,PEEK(I+2):FORL=0TO"+MID$(STR$(LN-1+I),2)+":READM:N=N+M:POKEK+L,
M:NEXT:READM:IFM()NTHEN
125 GOSUB400:A="PRINT"+CHR$(34)+"ERR"+CHR$(34)+":END"+CHR$(13)
127 GOSUB400:A=MID$(STR$(N+2),2)+C$+"IFPEEK(L+K+1))0THENL=L+1:GOTO"+MID$(STR$(N+
2),2)+"ELSEPOKEL+K,146:DELETE"+MID$(STR$(N+1),2)+"-"+MID$(STR$(N+4),2)+CHR$(13)
130 GOSUB400:A$=MID$(STR$(N+3),2)+C$:GOSUB400:AA="DATA":FORJ=0TOLN:CK=CK+PEEK(LS
+J):A$=AA+MID$(STR$(PEEK(LS+J)),2):GOSUB400:AA=",":IFJ=65THENAA=CHR$(13)+MID$(ST
R$(N+4),2)+C$+"DATA"
135 NEXT:FORJ=2TOI:A$=AA$+MID$(STR$(S(J)),2):CK=CK+S(J):GOSUB400:NEXT
140 A$=AA+MID$(STR$(CK),2)+CHR$(13):GOSUB400:IFB$)""THENCLOSE
145 END
400 IFB$)""THENPRINT#1,A$;:RETURNELSEPRINTA$;:RETURN
999 SAVE"INPTUSR5/BAS":PRINT"81.05.27.1813
```

```
10 DEFSTRA:DEFINTI-O:DEFDBLW-Z:GOSUB500
110 GOSUB600
120 PRINT:PRINT"The first word was '";LEFT$(AA$,I-1-K);"'
130 IFJ-I)0THENPRINT"The second word was '";MID$(AA$,I-K+1,J-I);"'
140 GOTO110
500 A="_____
_____":I=1:K=VARPTR(I):J=VARPTR(A):POKEK,PEEK(J+1):PO
KEK+1,PEEK(J+2):DEFUSR9=I::
501 DEFINTI-N:I=VARPTR(A$):J=VARPTR(K):POKEJ,PEEK(I+1):POKEJ+1,PEEK(I+2):FORL=0T
O104:READM:N=N+M:POKEK+L,M:NEXT:READM:IFM()NTHENPRINT"ERR":END
502 IFPEEK(L+K+1))0THENL=L+1:GOTO502ELSEPOKEL+K,146:DELETE501-504
503 DATA243,205,127,10,14,96,58,153,64,254,96,56,6,254,128,48,2,214,32,119,87,17
5,71,50,153,64,59,59,225,9,251,74,17,33,64,19,26,52,203,102,32,2,62,176,237,91,3
2,64,18,35,121,4,183,40,39,4,190,40,35,4,35,203,126,40,247,254
504 DATA32,48,4,6,1,56,21,33,32,64,94,35,86,18,19,122,254,64,56,1,27,43,115,35,1
14,35,26,119,104,175,103,195,154,10,3,32,8,13,128,8771
600 AA$=STRING$(96,32):K=0:J=VARPTR(K):I=VARPTR(AA$):POKEJ,PEEK(I+1):POKEJ+1,PEE
K(I+2)
605 PRINTCHR$(14);:I=0:FORJ=KTOK+95
610 ONUSR9(J)GOTO610,650,620,680:NEXT:IFITHENRETURNELSEI=J+1:RETURN
620 IFJ=KTHEN610ELSEPRINTCHR$(8);:I=IANDI(J:J=J-2:NEXT
650 IFITHENRETURNELSEI=J+1:PRINT" ";:NEXT:RETURN
680 IFITHENRETURNELSEI=J+1:RETURN
998 CLS:LIST550-900
999 SAVE"INPTUSR5/EXA":PRINT"81.05.27.1816
```

NCC PRINTER REVIEW

By Paul Steinberg

This was the first National Computer Conference that I have attended. Six hours of walking the show and I was tired, hungry and dizzier than usual. I was delighted to read several trade papers' reviews of the conference and find that my observations were in agreement with those better informed than myself.

The selection remains between formed letter and matrix printers. The formed letter printers had the edge on correspondent quality type and relatively low cost for font changes. The matrix printers had the advantage of speed, graphics and price. The use of the past tense is not a mistake. The conference offerings by many companies clearly demonsrated that the future trend will be toward matrix printers which have the capability of correspondent quality type, speed, graphics, price and almost unlimited selection of fonts through either "RAM" or "ROM" storage.

I will attempt to give you a review of the printers which I saw which were within the price range of the Micro-Computer user.

Sharp CE-122

Sharp is now selling the Pocket Computer and accessories. Radio Shack had a one year exclusive, which had expired. The only new item shown was a combination printer and cassette interface which will sell for $150. The printer is 16 columns with a speed of 1 line per second. An ink ribbon is used and the printer/interface is powered by a 4.8 Volt rechargeable battery or A.C. The paper width is 1-25/32 inch.

A high-grade Ink Jet printer was also shown by Sharp (Model 500). The machine was very impressive in speed and "silence". The print quality is excellent as it uses a 24 x 20 matrix. It operates at 100 C.P.S. No price was quoted.

Sharp Electronics Corporation
10 Keystone Place
Paramus, NJ 07652

Printer Products Division

This company showed a line of seven Mini-Printers which are stand-alone output peripherals for use with Data Loggers, Tape Transports, Microprocessors, Minicomputers, and other data acquisition devices. The most interesting of the line was a 40 column label printer (Model 40L). The device uses standard pin feed labels and has a full 96 ASCII character set with either RS-232 or parallel interface. The speed is 58 C.P.S. maximum.

Printer Products Division
Capitol Circuits Corp.
24 Denby Road
Allston, MA 02134

Toshiba TH-2100H

Toshiba showed three matrix printers, but the real show stopper was the TH-2100H. Before you get too excited by the review, the price is expected to be $2000 O.E.M. in quantities of 2200, and deliveries are expected in January of 1982.

As I passed the Toshiba exhibit, I was attracted to what I thought was a typesetting machine. I walked over to talk to the oriental gentleman standing by the machine, but stood speechless for a few moments when I realized that I was watching a matrix printer. My mind scanned its data banks for a rich uncle I could ease into the here-after. I finally gained my senses and greeted my host. He went on to explain that English is a very easy language for a matrix printer, but Chinese is not. The 7 and 9 wire heads could not produce the Chinese language, so Toshiba made a 24 wire head which uses a 24 x N matrix for printing correspondence quality type at 100 C.P.S. and 160 C.P.S. in Data Processing Mode which uses a 16 x 11 matrix. They use a 24 x 28 matrix at 155 C.P.S. and there is also complete graphics.

Toshiba America, Inc.
OEM Division
2900 MacArthur Blvd
Northbrook, IL 60062
312-564-1200

Micro Peripherals, Inc.
Model 88G and MP-150

MPI had two printers which were both excellent machines for the money. The Model 88G handles fan-fold, roll and sheet paper in 9.5" widths. Single sheets are feed in from the front of the printer, and are automatically drawn in and positioned at the top-of-form. The matrix is 7 x 7 for 80, 96 and 132 column printing. A 11 x 7 matrix with serif-style font is used in the 80 column format for correspondent grade. Double-width letters are available for all type densities, and can be imbedded within the line via software. Dot addressable graphics are available. The speed is 100 C.P.S. bi-directional. A 1K buffer is standard, with an optional 2K buffer available. Basic List Price is less than $800.

The Model MP-150 handles paper to 15", but will not handle single sheets. It uses a 7 x 9 matrix for data printing and an 11 x 9 matrix for correspondence grade printing. The machine is somewhat faster than the 88G. It can print up to 150 C.P.S. It has optional buffers up to 8K. Up to 226 columns can be printed in 16.7 C.P.I. density. The printer has a RAM and ROM memory for storing different fonts. The RAM can be used to down-load special fonts from the computer, and different ROM memory fonts are available. The list price is $1395. I was told that they plan to have a MP-200 available soon. The major difference will be speed.

Micro Peripherals, Inc.
4426 South Century Drive
Salt Lake City, UT 84107
801-263-3081

Malibu Model 200

This printer is another of the dual capability type. It can operate at a data processing rate up to 250 C.P.S. with 165 C.P.S. standard. Letter quality is at a speed of 42 C.P.S. with 70 C.P.S. optional. The standard type face is Titan 10 pitch, with program-controlled of up to 12 fonts. The nine wire print head uses a 9 x 9 matrix for high speed printing and a 19 x 18 matrix for letter quality. The expanded type is 2x and 4x horizontally and/or vertically. Dot control graphics are standard (60H x 72V -or- 120H x 144V). Character sets can be downloaded to the printer. The buffer supplied is 512 characters, expandable to 6.5K. The character spacing is 10, 12, 15, 17 per inch and proportional. Line spacing is either 6 or 8 lines per inch. Paper feed is either ajustable tractor or friction. I regret that I did not get the selling price.

Malibu Electronics Corporation
2301 Towngate Road
Westlake Village, CA 91361

805-496-1990

Vertical Data Systems Converter TP121

The Converter TP121 will allow you to connect your computer directly to an Olivetti ET121 electronic typewriter. The converter sells for $200, and the Olivetti ET121 is sold for about $500.

Vertical Data Systems Inc.
1215 Meyerside Drive
Unit 2A
Mississauga, Ontario,
Canada L5T 1H3
416-671-1752

Anadex WP6000

It appeared that they had a preproduction model on the floor because the letter quality printing was a little sloppy. I did not get a price, but estimate it to be about $2500. It was the fastest printer I saw in that price range. Correspondence quality at speeds in excess of 150 C.P.S. and data processing speed in excess of 500 C.P.S.

Anadex
9825 De Soto Avenue
Chatsworth, CA 91311
213-998-8010

There were more printers that I examined within the Micro-System price range, but I think it is past time for a wrap-up. The reason I spent so much of my time at the conference examining printers is that I am in the market for one myself. My Line Printer-I can not meet my current needs. My personal pick is the Paper Tiger IDS-560. It is not in the above review because it is not really new. The reason for my choice is that I like the look of the print in both the data and correspondence mode, particularly in the 17 C.P.I. size which I use a great deal for accounting reports. But the most important reason is the support IDS has given to micro users. I don't need a $1500 printer, a phone number and a shipping box.

All of the literature and print samples I accumulated at the conference will be left with EBG & Associates for your further research.

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(Radio Shack or Tandy Corp. are not in any)
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BEEPER

by: James A. Lisowski

Here's a quick TRS-80 hardware project that can be assembled in only three minutes. Beeper is a self-contained tone source that attaches to the subminiature gray cassette relay plug on your Model I system. Whenever the relay turns on (cassette loads, game sound effects, alarm clock programs or specially programmed error detection), Beeper screams.

Beeper came about due to a request from a users group member. For business use, he wanted a device that would beep only when the ENTER key was pressed. This program comes close. It beeps only if the ENTER or BREAK key is pressed.

This program is based on the fact that the ROM routines jump to RAM memory location 41AFH when the ENTER key is pressed. At this point, a "turn on the cassette relay, delay and turn it off" routine is added. For some machines, this program can be relocated with the ORG 40B8H statement. This will cause the program to reside in an unused area of "reserved" RAM memory. If you do this, there is no need to reserve memory at "MEMORY SIZE?" time.

The hardware is even simpler. Required are: a Piezoelectric Buzzer -- Radio Shack Part 273-060 ($2.99); a 9-volt battery clip, RS 270-325 (5/99c); a 3/32" subminiature phone jack, RS 274-292 (2/$1.19); a FREE 9-volt battery, some solder and a small soldering iron.

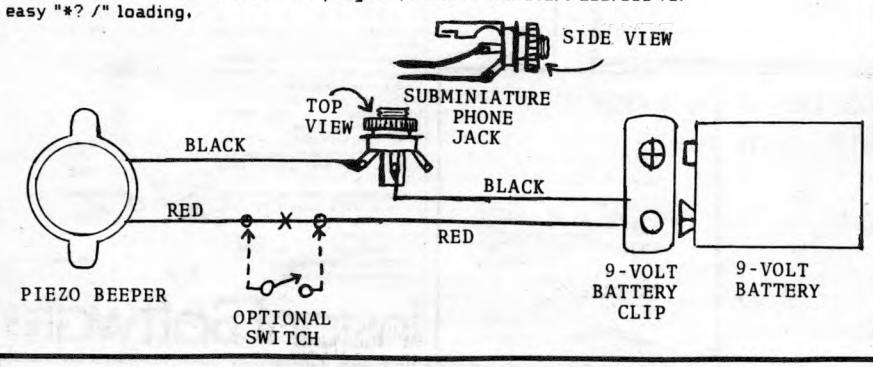
Construction is logical: red wire to red, black to jack, jack to black -- see the diagram for details. Since the high pitched buzzer only operates during the beep, no off switch is needed. However, you may want to add a switch (break the circuit as shown) to turn the Beeper on and off as desired, without having to unplug it. Add a case if you like. For use in your BASIC programs, the command: OUT 255,4 turns the Beeper on and OUT 255,0 or the program end turns the Beeper off. (The "Beep on ENTER" program is not required for general Beeper operation.) A final thought is to use the ON ERROR statement and Beeper to catch your programming mistakes.

```
00100 ;BEEP ON ENTER ROUTINE V1.0 3-81
00110 ;JAMES A. LISOWSKI
00120 ;MILWAUKEE AREA TRS-80 USERS GROUP
00130 ;POB 184  S. MILW., WI 53172
00140         ORG     7FE5H           ;TOP OF MEMORY VERSION
00150 DELAY   EQU     60H             ;ROM DELAY ROUTINE
00160 ;
00170 START   LD      L,0C3H          ;SET UP THE SUBROUTINE CALL
00180         LD      (41AFH),HL      ;MAKE LOC 16815 DECIMAL
00190         LD      HL,BEEP         ;A CALL TO THE BEEP ROUTINE
00200         LD      (41B0H),HL      ;ON ENTER OR BREAK
00210         HALT
00220 ;
00230 BEEP    LD      A,04            ;TURN ON THE RELAY
00240         OUT     (0FFH),A
00250         LD      BC,5FFH         ;LOAD THE TONE DURATION
00260         CALL    DELAY           ;USE ROM DELAY ROUTINE
00270         LD      A,0             ;TURN THE RELAY OFF
00280         OUT     (0FFH),A        ;DONE
00290         RET                     ;PUBLIC DOMAIN SOFTWARE
00300         END
00310
```

As listed with ORG 7FE5H, set MEMORY SIZE to 32740 and reply to the second SYSTEM *? prompt with /32740.

If the ORG is changed to ORG 40B8H, the program is stored in a "Reserved" RAM area and there is no need to set MEMORY SIZE. Answer *? with /16568. (Note: Placing the program in Reserved RAM may not work on all machines. Try it and see.)

If you use TBUG to PUNCH this program, include the start address for easy "*? /" loading.



COMLINE

by EBEN KENT

I'm amazed by the number of new services available on CompuServe. Perhaps the only disappointment is that one never really hears about them. Last night I logged on an decided to delve into some of the items I never access. The first I examined the information on Education. That choice contained a number of interesting pieces prepared by the College Board. These included choosing a college to adult education to financial aid. Actually I had expected to find courses such as you can access on the PLATO (tm) system. However, this is a good start to a very needed service.

The newspaper section has expanded quietly over the past few months. Presently (as of May 30, 1981) eight papers are represented, including THE COLUMBUS DISPATCH, THE NEW YORK TIMES, VIRGINIAN-PILOT & LEDGER STAR, THE WASHINGTON POST, THE SAN FRANCISCO CHRONICLE, THE SAN FRANCISCO EXAMINER, THE LOS ANGELES TIMES, and THE MINNEAPOLIS STAR AND TIMES. I understand other papers will be represented quite soon. I haven't really examined carefully the similarities and differences among the different papers. Perhaps that can be a future column. However, be it suffice to say that on CompuServe we have seaboard to seaboard coverage of the news.

The bulletins boards which appear on MicroNET has also expanded to ten (as of May 30, 1981). Many are of direct interest for TRS-80 owners. These include the ever famous MNET-80 (TRS-80 Users Group), VTOS (VTOS/ST80 Users), MCONN (MicroConnection Users), LDOS (LDOS Users), and CP/M (CP/M Users). As you can note, many are specialized to an operating system. Don't shy away from them, however, as many interesting side issues appear. A good example is the VTOS bulletin board. There are very few messages about VTOS any longer. However, you'll find interesting information about Orchestra 80 (tm), Super-Utility (tm), and Maxi Manager (tm). The authors/distributors of all three frequent the board. Many boards include specials and catalogs of their sponsor. MNET-80 is a good example.

I recently access an unusual bulletin board on MicroNET. Although not TRS-80 related, its information should be of interest to many readers. It is the microNETwork of Interactive Telecommunications or more commonly known as the NETWITS board. Basically it is an online monthly "magazine" concerned with various aspects of telecommunications and other not so related subjects. The authors of this "magazine" are you and I. The "editors" are attempting thematic issues. This month's articles cover Toffler's book, THE THIRD WAVE, astrology, upcoming computer faires / expositions / conferences, cybernetics, and a history of the computer. The board is set up similar to other MicroNET bulletin boards, but there are some cosmetic differences, which actually make it the easiest board to use. It is worth a gander through.

The SOURCE just sent some of its subscribers quite a lengthly questionaire. Its objective was obvious -- to improve service and discover how its users felt about certain services. I was surprised to find that some of the questions centered around the addition of games already available on the TRS-80 (Adventure, for example). Frankly, I don't know why someone would want to spend his connect time playing a game he/she can own. Anyway I'll be keeping an eye on the SOURCE to see if it questionaire has any impact on the service.

I came across a comparision of the SOURCE and CompuServe in a publication published by the ACU (Association of Computer Users). The report was somewhat dated (October 1980). However, it clearly brought out the differences, strengths, and weaknesses of the two systems. For example, the SOURCE lost out in all three comparisions of time required by the system to perform some function. Interestingly enough the report calculated the costs. However, the report clearly showed that the SOURCE had a much more sophisticated news retrieval service with UPI.

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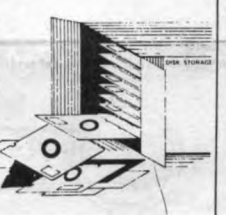

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